Validating the Satisfaction and Continuance Intention of E-Learning Systems: Combining TAM and IS Success Models

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ABSTRACT

Many e-learning studies have evaluated learning attitudes and behaviors, based on TAM. However, a successful e-learning system (ELS) should take both system and information quality into account by applying ISM developed by Delone and McLean. In addition, the acceptance for information system depends on the perceived usefulness and ease of use according to TAM. This research combined TAM with ISM by introducing system quality, quality of platform information, and course information as an antecedent of perceived usefulness and perceived ease of use. These factors were crucial for understanding users’ intention to continue their use of ELS. This study investigated 412 students with ELS experiences. The results indicate that system quality, platform information, and course information had significantly related to user satisfaction and their intention to use ELS continuously.

Keywords: E-Learning, IS Success Model, Satisfaction, Structural Equation Modeling, TAM

INTRODUCTION

E-learning has evolved incrementally from distance learning, computer learning, to e-learning and blended learning. Whatever it becomes, a system platform as a learning medium remains intrinsically indispensable. Therefore, the quality of an e-learning system (ELS) will have a strong impact on its acceptance and satisfaction (Chiu, Hsu, Sun, & Lin, 2005; Rhee, Moon, & Choe, 2006; Walker & Johnson, 2008).

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Users’ acceptance and satisfaction come largely from the usefulness and friendliness of ELS. A review of literature indicated that a plethora of studies had applied Technology Accept Model (TAM) to evaluated users’ perceived usefulness and friendliness after using ELS (Roca, Chiu, & Martínez, 2006; Lee, 2006; Pituch & Lee, 2006; Lim, Lee, & Nam, 2007; Ngai, Poon, & Chan, 2007; Toral, Barrero, & Martínez-Torres, 2007; Martínez-Torres et al., 2008).

Still more, users’ acceptance of ELS depends on not only its quality but also the learning
courses and contents. Therefore, this is timing to shift research focus from the platform construct to the courses and their contents design. The Information Systems Success Model (ISM) developed by Delone and McLean’s (1992) takes both information quality and system quality seriously. Any successful information system should not ignore any one of the two qualities. Roca et al. (2006) also argued that any examination of factors related to e-learning satisfaction remain insufficient without including information quality.

This study has a contribution of combining ISM with TAM by incorporating major system characteristics, such as system quality, course information, and platform information quality. Our model provides a useful framework of examining users' intention for using ELS continuously. The Structural Equation Model (SEM) was performed using the AMOS 5.0 software to test proposed framework.

**THEORETICAL BACKGROUND AND HYPOTHESES**

**Technology Acceptance Model**

David (1989) proposed TAM that the perceived usefulness and the perceived ease of use are important antecedents for information system acceptance. TAM was applied to explain and predict user’s behavior of accepting technology products. Meanwhile, it recognizes external variables as affecting perceived usefulness, perceived ease of use, and intention of adopting that information system. Until now, TAM has been widely adopted to examine assorted technology products and related topics of the Internet activities, such as web browser and E-store (Ngai et al., 2007).

Since e-learning also involves internet use, several studies used TAM to examine ELS acceptance behavior (Lee, 2006; Pituch & Lee, 2006; Roca et al., 2006; Ngai et al., 2007; Walker & Johnson, 2008). Pituch and Lee (2006) recognized system characteristics as important variables affecting ELS user behavior and further classified system characteristics into functionality, interactivity and response. Pituch and Lee (2006) also argued that system characteristics, self-efficacy and internet experience will affect ELS use. Ngai et al. (2007) examined technical support of system platform affected perceived usefulness and perceived ease of use, further determined attitude and intention of use.

In line with the TAM model, this study assumes the relationship among perceived usefulness, perceived ease of use, satisfaction to ELS, and continuance intention as the following five hypotheses:

**H1**: Perceived usefulness positively affects continuance intention.

**H2**: Satisfaction to ELS positively affects continuance intention.

**H3**: Perceived usefulness positively affects satisfaction to ELS.

**H4**: Perceived ease of use positively affects satisfaction to ELS.

**H5**: Perceived ease of use positively affects perceived usefulness.

**Information System Success Model (ISM) and the Relationship with TAM**

According to ISM, the system quality and information quality will affect user satisfaction; in hence, both will influence individual impact and organizational impact (Delone & McLean, 1992). System quality evaluates the information processing system itself, whereas information quality represents the quality of information system output. Shaw, DeLone and Niederman (2002) claimed that service quality has positive influence on user satisfaction. Pitt, Watson, and Kavan (1995) also recognized that successful information system should include the concept of service quality to evaluate its efficacy; otherwise, the result will be incomplete. Due to the emerging World Wide Web circumstance, this model finally had extended, and the service quality was included to evaluate the success of e-commerce systems in the internet era (Delone & McLean, 2004).
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